

OIT's 3rd "Expo" to provide unique insights into future of American industry—and a competitive edge

OIT will be joined by more than 100 exhibitors and 1000 attendees from February 7-9 in gaining unique insights into the future of American industry at the 3rd Industrial Energy Efficiency Symposium and Expo. The event—to be held at the Renaissance Washington (DC) hotel—will include a fast-moving, highly informative program with:

- Stimulating sessions featuring numerous nationally-recognized expert speakers
- Informative exhibits by many of America's most energy-efficient and technology-savvy companies
- Up-to-the-minute information on industry/government R&D programs and technology partnerships
- Computer terminals allowing online access to a host of OIT products and services
- Unsurpassed opportunities to network with leaders and decisionmakers from an exceptionally broad range of industries and government agencies

"What makes this event especially valuable is that it is both visionary *and* practical," said Denise Swink, DOE's Deputy Assistant Secretary for Industrial Technologies.

"Attendees will be exposed to a really wide range of technologies that could improve their energy efficiency and impact their industries and markets. This will be a great opportunity for industry decisionmakers to secure valuable intelligence and contacts that can provide a competitive edge."

OIT's Expo coordinator, Doug Kaempf, added, "With so many technology-focused organizations under one roof, this will be an excellent place to find new partnership opportunities."

The speaker sessions have been intentionally designed so as to address a wide range of

issues, topics and technologies of common interest to members of all the energy-intensive "Industries of the Future." Speaker sessions will address such "supplier" topics as combustion, distributed generation, information technology and trends, sensors, controls and robotics and materials. Other sessions will include experts who will address the expected futures of such IOF "customer" industries as automobiles, aerospace, construction, electronics, communications and containers. Other Expo speakers will provide insights into such national policy issues as climate change, the future of government/industry R&D partnering and state-level initiatives.

**To register, see page 9
inside or call toll-free
1-877-OIT-SYMP**

Breakout sessions featuring industry leaders as well as OIT teamleaders and program managers are also planned. This will allow participants to hear about the latest progress in industry roadmapping and R&D initiatives, ask questions, get answers, and explore potential partnership opportunities.

Beyond the draw of the uniquely informative speaker program, both Swink and Kaempf emphasize that the networking opportunities alone—with hundreds of research managers, technology executives, National Lab representatives, Federal government and state leaders and other key players in attendance—put OIT's Expo on the list of "can't miss" events for many in industry.

At press time, keen interest in exhibit space forced OIT to reconfigure the show floor plan in order to be able to accommodate additional exhibitors. But this will allow attendees access to even more exhibits demonstrating the latest technologies likely to impact U.S. industry in the near future.

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AWARDS

A waste heat-driven chiller co-funded by OIT and Total Refinery and developed by Energy Concepts and Plantec Utility Services received the **Environmental Project of the Year Award** from the **Association of Energy Engineers**.

OIT's Inventions and Innovation program received an **Appreciation Award** in the Fall from DOE's **Office of Economic Impact and Diversity** for support of small business.

On behalf of OIT, Deputy Assistant Secretary Denise Swink accepted a plaque from the **Steel Founders' Society of America**. The plaque recognized OIT's support of the steel casting industry through the Industries of the Future program.

Mrs. Swink presented awards to the **Univ. of Tennessee and Univ. of Wisconsin at Milwaukee**. The awards recognized each university's long term contribution to improved energy efficiency through its Industrial Assessment Center.

Dr. Peter Angelini, Advanced Industrial Materials program manager at Oak Ridge National Lab, was named a **Fellow of ASM International**. He received the honor for his technical and programmatic leadership at the ASM Annual Meeting.

Renewable Bioproducts *Roadmap and solicitation coming soon*



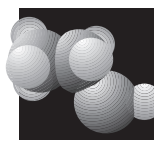
The **Agriculture** Team's partners in the agricultural, forestry and chemical communities are putting the finishing touches on their technology roadmap. The roadmap prioritizes the industry's long-term needs and focuses on (1) the use of crops in current processing systems, and (2) modified crops in new processing systems.... With that document soon to be published and Federal funding now approved, the Team and industry's Executive Steering Committee are developing a solicitation to request R&D proposals related to the highest priorities in the roadmap.... Two new partners—Grain Processing Corp. and the New Uses Council—have recently joined the 13 original signees of the Compact at the Commodity Classic in California last year.... The partnership was asked by the American Society of Agricultural Engineers to submit a feature story for its magazine, "*Resource*".... The Team and its partners are working with the **Chemical** Team on its upcoming bioseparations workshop and with other offices under Assistant Secretary Reicher on his initiative for greater integration in the emerging biomass industry. (Contact: Doug Faulkner, 202-586-2119)

New grants awarded to 25 inventors with good ideas



The **Inventions and Innovation** program has awarded \$1.6 million in grants to 25 independent inventors and small businesses. Among the energy-efficient projects selected for funding are an advanced design for small electric motors that offers a 25% improvement in output power, an improved cardboard manufacturing process that uses 25% less wood fiber, and an innovative clothes dryer that could save enough energy to heat homes in New Hampshire for four months. A complete listing of the awardees is posted on OIT's homepage (oit.doe.gov). Click "News" and then click "Energy Department Helps Bring New Energy Saving Ideas to Market".... In addition to financial assistance, the

Chemicals *Several roadmaps moving forward*



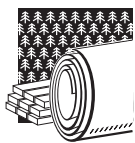
Working with the chemical industry, academia, National Labs, and others, the **Chemicals** Team continues to move forward in helping to produce several industry roadmaps.... A workshop co-sponsored with EPRI on Electrotechnology and Alternative Reaction Mechanisms for the Chemical Industry focused on developing consensus R&D priorities in the areas of (1) electrotechnologies, and (2) alternative reaction media and raw materials. Publication of these two roadmaps is expected shortly.... The Team participated in a workshop to identify promising materials technologies for future chemical industry R&D efforts. Major areas reviewed were: (1) New Materials, (2) Materials Characterization, and (3) Disassembly, Recovery, Recycle, Reuse and Renewable Technologies.... AICHE has published the separations roadmap (distillation, extraction and crystallization), developed by industry and facilitated by OIT's Chemicals Team. It is available through OIT or the AICHE by calling Jo Rogers at 212-591-7727.... The Team is co-sponsoring another separations workshop in February, focusing on prioritizing R&D needs in the bioprocessing separations area. (Contact: Hank Kenchington, 202-586-1878)

I&I program provides technical guidance and commercialization support through five Regional Resource Centers for Innovation (RRCIs) to successful applicants. These Centers assist inventors and innovators in bringing their ideas and technologies to the marketplace by locating technical partners, commercial sponsors, business plan resources and additional funding sources. Several of the RRCIs recently sponsored conferences in their regions:

- The Western RRCI held a conference on "Helping Bring Ideas to Market," nearly 100 local developers from seven states attended.
- The Southeast RRCI held a workshop to help expand inventor awareness about available sources of funding in the region.
- A Northeast RRCI meeting addressed "Networking for Commercialization Success" for inventors and service providers in its region. (Contact: Sandy Glatt, 202-586-3897)

Forest Products

Agenda 2020 Implementation Plan released



AF&PA has released a formal plan titled "Agenda 2020—The Path Forward" for turning the roadmap into reality.... As part of the FY00 solicitation process, OIT's **Forest Products** Team and AF&PA

recently invited about 60 R&D investigators to present posters describing their proposals. The sessions gave investigators an opportunity to meet the Agenda 2020 Task Group representatives who will be evaluating the proposals.... The U.S.

Forest Service has signed an agreement with AF&PA to support R&D in the sustainable forestry areas of Agenda 2020. This will

provide a new source of Federal funds for R&D areas

identified as high priority by a broad base of industry experts.... The

Forest Products Team in partnership with Motor Challenge will exhibit at the TAPPI 99

megaconference March 1-4 at the Georgia World Conference Center. Over 10,000 attendees are expected. (Contact: Valri Robinson, 202-586-0937)



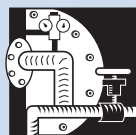
Motor Challenge announced the release of MotorMaster+ 3.0, a significant upgrade of the innovative software that is helping industrial motor users manage their systems more efficiently and productively.

The new version is network compatible, enabling multiple users to access the system simultaneously. It also features new variable load analysis capabilities, an upgraded motor database with 1998 models and pricing, and much more. The new version is packaged with an interactive training guide, making the software even faster and easier to use.... Call the Motor Challenge Clearinghouse at 1-800-862-2086 for your copy of the *U.S. Industrial Motor Systems Market Opportunities Assessment*, a first-of-its-kind snapshot of motor-driven system use in U.S. industry. (Contact: Paul Scheihing, 202-586-7234)

States Corner

New States "IOF" Team announces new solicitation

OIT's new **States** Team is bringing the benefits of the Industries of the Future strategy to the state level. It is developing a state-by-state approach to informing state and local governments and their industry counterparts about program opportunities at the national level. Simultaneously, it is involving OIT's industry teams in state-level initiatives, and helping state agencies and industries build successful industry-government partnerships.... A meeting in the Fall with 1998 grant winners from 14 states helped improve substantially their awareness of the many products, services and partnering opportunities available through OIT and states.... The team announced a new solicitation at the end of 1998.... The team also announced the creation of a new listserver dedicated to state IOF topics. To sign up, send an e-mail to james.quinn@ee.doe.gov. (Contact: Jim Quinn, 202-586-5725)



Steam Challenge has formed a Steering Committee with 35 representatives from industrial steam users, steam equipment suppliers, utilities, state energy offices and steam energy audit organizations.

The Committee is responsible for reviewing the program's new products and services, recommending new initiatives and reviewing the recommendations of its six subcommittees:

(1) Program Marketing, (2) Program Training, (3) Benchmarking & Best Practices, (4) Technical, (5) Program Evaluation & Metrics, and (6) Business Management.... To order Steam Challenge products and services, call the Motor/Steam Challenge Clearinghouse toll-free at 1-800-862-2086. (Contact: Fred Hart, 202-586-1496)



The **Industrial Assessment Center (IAC)** program has published a CD-ROM containing much valuable information for plant operators. Contents include:

- The IAC database of more than 7000 plant energy assessments
- A self-assessment workbook to help small plants perform their own audits
- Information on scheduling an assessment with IAC experts.

The CD is available from the OIT Resource Center at 202-586-2090. (Contact: Chuck Glaser, 202-586-1298)

Combined Heat & Power Summit Held

Combined Heat and Power (CHP) systems generate electrical/mechanical and thermal energy simultaneously at the point of use. These systems benefit industry through energy savings, since much of the energy lost in separate electrical-mechanical energy generation can be recovered using CHP, and then used for steam, heating or cooling. Because electric utility restructuring has created momentum for CHP as a cost effective energy strategy, OIT has initiated a new **CHP Challenge** to better inform industry about the benefits of CHP systems.

The CHP Challenge recently sponsored a CHP Summit in Arlington, VA. The event provided a forum for the CHP industry—including combustion and chemical manufacturers, fuel cell designers, large turbine and small engine manufacturers, and government employees—to explore opportunities for widespread application of CHP systems.

DOE Assistant Secretary Dan Reicher chaired the Summit, which featured sessions by CHP industry experts. Key topics of the Summit included the market for CHP, local perspectives on CHP and barriers to use, which are largely institutional and regulatory. Efforts of the CHP Challenge program can help overcome many of these barriers. To learn more about CHP Challenge, visit OIT's website or contact OIT's Pat Hoffman at (202) 586-6074.

Aluminum Five new projects announced



The **Aluminum** Team has selected five new R&D projects for cost-shared funding in FY99. The selections were based on (1) the priority needs of the industry as identified in its roadmap, and (2) potential to improve energy efficiency and competitiveness of the aluminum industry. New projects include:

- "Processing of Aluminum Waste" targets reduced energy use by producing lightweight aggregate from oxide residues rather than clay.
- "R&D for Energy Efficient Aluminum Production Cells" projects 25-30% reduction in energy for cells using new technology including an inert metal anode.
- "Inert Metal Anode Life in Low Temperature Aluminum Reduction Processes" targets reducing cell voltage by 1.1 volt for a potential energy savings of 30%.
- "Potlining Additives" will test additives that could reduce cell voltage by .2 volt.
- "Improved Grain Refiner Process for Aluminum" will cut scrap generation by eliminating a step in the production process.

In total, energy savings of the projects could reach 117 trillion Btu's annually by 2010.... The FY00 solicitation is open through February. Visit www.id.doe.gov/doiid/psd/solicit.html for further information. (Contact: Sara Dillich, 202-586-7925)



Steel Student program announced



Working with the Steel Manufacturers Association, OIT's **Steel** Team has helped establish a student fellowship program for the steel industry. The objective is to interest

highly qualified and motivated students in careers in the U.S. steel industry—arguably the most energy-efficient and technologically advanced in the world. Approximately a dozen freshmen and sophomore engineering students will work on energy-saving projects in steel mills under the guidance of industry mentors from Steel Manufacturers Assoc.-member companies. The students will be expected to publish and present their results to the industry. "OIT has demonstrated exceptional flexibility in helping us get this program up and running quickly. We think it will provide outstanding value to our members,"

said Thomas Danjczek, President of SMA. The program will be administered by the Univ. of Cincinnati.... The American Iron and Steel Institute has received strong interest in its second R&D solicitation that's based on needs identified in the steel industry roadmap. Selections are expected to have been announced by the time you read this. Projects selected under the first solicitation will be reviewed at OIT's Expo in February. (Contact: Scott Richlen, 202-586-2078)

Metalcasting Eight new R&D projects selected



Guided by the industry's roadmap priorities, the **Metalcasting** Team has selected at least eight new projects for funding in FY99, as follows:

Manufacturing technologies:

- "Yield Improvement in Steel Castings"
- "The Effects of Applied Pressure During Feeding on the Fatigue Properties of Critical Cast Aluminum Alloy Components"

Materials technology-related:

- "Die Materials for Critical Applications and Increased Production Rates"
- "Mold Materials for Permanent Molding of Aluminum Alloys"
- "Casting Characteristics of Aluminum Die Casting Alloys"
- "Steel Foundry Refractory Lining Optimization: Electric Arc Furnaces"

Environmental technology-related:

- "Non-incineration Treatment to Reduce Benzene and VOC Emissions from Green Sand Moldin Systems"

Application development:

- "Qualitative Reasoning for Additional Diecasting Design Applications"....

A lost foam training video that was co-funded by the Team and its industry partners was unveiled at the Lost Foam Showcase to significant industry interest. For more information, call Dr. Joseph Santner at the American Foundrymen's Society at 1-800-537-4237. (Contact: Harvey Wong, 202-586-9235)

Mining

New team moving ahead



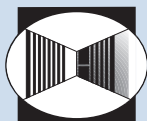
Congress approved a \$2 million budget for OIT's new **Mining** Team. The team is busily at work insuring these valuable public resources are put to the best possible use.... The industry has published its strategic vision titled: "The Future Begins with Mining: A Vision of the Mining

Industry of the Future." Call the OIT Resource Center at 202-586-2090 for a copy or visit the Mining Team's homepage on the OIT website at

www.oit.doe.gov....

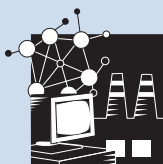
The National Mining Association—the Team's partner in working with the industry—hosted a roadmapping workshop in Denver, CO. More than 40 representatives from the mining industry,

equipment suppliers, academia, and government brainstormed and prioritized R&D needs. The workshop focused on technologies with broad applicability that will benefit all types of U.S. mines. The roadmap will be published in early 1999.... The Team is currently putting together a plan to solicit R&D proposals and select projects that will best forward the industry's vision and its roadmap goals. (Contact: Toni Marechaux, 202-586-8501)



In **Cogeneration**, the Advanced Turbine System program held its Annual Review in November. An underlying message of the meeting was that working together through public-private sector partnerships can optimize available resources for ATS development.

Speakers from the EPRI, GRI and the Gas Turbines Assoc. discussed their partnership programs.... Program partner Solar Turbines Corp. has won the 1998 Baldridge National Quality Award for manufacturing. (Contact: Pat Hoffman, 202-586-6074)

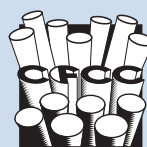


The **Advanced Industrial Materials** program announced the first commercialization of products manufactured from advanced nickel aluminide intermetallic alloys developed at Oak Ridge National Lab.

Testing at General Motors over several years has demonstrated that the material provides superior corrosion resistance and high temperature fatigue resistance. Additionally, it does not carburize in the heat treating environment. Alloy Engineering and Casting Company (AECC), of Champaign, IL has licensed the technology and will be mass producing trays and fixtures for a wide variety of industrial customers engaged in metal heat treating. (Contact: Charlie Sorrell, 202-586-1514)



The **Sensors and Controls** program has selected a project to be funded as a result of its FY98 laser ultrasonic technology solicitation, which addressed industrial process monitoring and control needs. Project partners include a steel manufacturer, National Lab, and research institution. The contract is currently under negotiation.... More than a dozen proposals have been received in response to the S&C FY99 solicitation. They address high-priority needs that cut across many "IOF" industries. The proposals have been reviewed by experts from academia, NSF centers, NIST, and the glass, paper, steel, aluminum and chemical industries. A list of proposals for final selection has been recommended, and final contract awards are currently being negotiated. (Contact: Eric Lightner, 202-586-8130)



The **Continuous Fiber Ceramic Composites (CFCC)** program recently co-sponsored a conference with the U.S. Advanced Ceramics Assoc. that focused on the use of

advanced ceramics in glass production. A number of mutually beneficial opportunities for future cooperation among the advanced ceramics and glass industries and DOE were identified.... The CFCC program participated in a workshop on Ceramic Matrix Composite Material Technologies for Turbine Engine Combustors at DOD's Turbine Engine Technology Symposium. The workshop, attended by numerous gas turbine manufacturers, provided a valuable forum for information exchange on the development and testing of CFCCs for applications in both industrial and military gas turbines. (Contact: Debbie Haight, 202-586-2211)



The **Combustion** program recently announced a host site for the demonstration of a commercial version of the Forced Internal Recirculation (FIR) burner developed in partnership with

IGT and Detroit Stoker. It will be installed in a plant in Southern California, and used to generate steam for the production process. While current low NOx burners typically demonstrate 25-30 ppm NOx, the FIR burner has consistently registered 6 ppm or lower. This is the same level produced by selective catalytic reduction systems but without the use of ammonia or a catalyst, which also helps keep costs low. Formal commercialization will likely follow this demonstration—good news for the wide array of industrial plants concerned with combustion system emissions. (Contact: Gideon Varga, 202-586-0082)

Recent Successes

New immersion tubes show promise in aluminum casting furnace

A major automotive manufacturer is currently evaluating a **continuous fiber ceramic composite (CFCC)** immersion tube developed by Textron Systems Corp. through cost-shared funding with OIT's CFCC program. The nitride bonded SiC-reinforced immersion tubes are being tested in an aluminum casting furnace. The goal is to replace the existing monolithic ceramic tubes in order to achieve longer life and less downtime. The monolithic tubes currently in use have a life span of 30 to 75 days.

In testing performed at the automotive manufacturer's development lab, one immersion tube lasted more than two months through two cold starts and 31 heating and removal cycles. The operating temperature of the CFCC tube in the furnace is approximately 1600 F (150 F less than that needed for the monolithic tubes to hold the tank at the proper temperature). Textron Systems calculated an improved overall heat transfer efficiency of at least 40% on the new immersion tube, which endured more than 1100 hours of continuous operation. The tube eventually failed, but lasted as long as or longer than the monolithic tubes currently in use. In addition, it appears that the failure may have been due to a faulty thermocouple, causing excessive thermal exposure and thermal shock to the immersion tube. This would have caused current materials to fail as well. A second tube is now being evaluated and has been running successfully for more than 1000 hours and is expected to survive for five months.

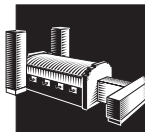
Based upon these results, the automotive manufacturer is planning to test similar CFCC immersion tubes in another facility under actual operating conditions. The goal is to eventually convert many of their other casting facilities to CFCC immersion tube heating.

Wisconsin plant motor efficiency investments pay back quickly

A Louisiana Pacific plywood plant in Tomahawk, WI is proving that low-cost, simple changes can realize significant energy savings in a **Motor Challenge** showcase demonstration. The plant operators have cut their annual energy bill by \$85,000 by replacing a variety of electric motors with smaller, more efficient ones at a total investment of \$44,000—a 6 month payback.

Glass

Glass LabCall '99 leads to five new projects



Following a technical review by industry representatives of 16 R&D proposals, the **Glass Team** recommended five for funding, including:

- "Advanced Process Control for Glass Fabrication" will develop an advanced process control system for glass fabrication, including a physical model, suite of sensors, data acquisition system and control software.
- "Enhanced Cutting and Finishing of Handglass Using a CO₂ Laser" will develop a prototype system for factory testing which is expected to be very useful for small glass manufacturers.
- "Sensor, Thermochemical Model and Control Strategy for the Redox State in Glass Melts" will develop a simple redox sensor suitable for a wide range of glass melting applications.



These and the other two selected projects are being led by teams of industry and National Lab partners.... The Team and its colleagues on the new Glass Manufacturers Industry Council (GMIC) hosted an "Information Room" at the 59th Conference on Glass Problems in Columbus, OH. The group provided information on OIT's glass R&D projects and other programs and resources of potential use to the glass industry. Mr. Jim Shell from TechniGlass Corp. was a featured speaker. His remarks highlighted the work of the GMIC and its groundbreaking efforts to synergize the diverse segments of the glass industry. (Contact: Theodore Johnson, 202-586-6937)

System for recovering steel mill spent pickling solutions being demonstrated

A NICE³ grant to Beta Control Systems of Beaverton, OR is helping to support the demonstration of a system to recover and recycle spent hydrochloric acid pickling solutions used at small and medium-sized steel mills. After used to clean steel and remove rust, these solutions currently must be injected into deep wells or neutralized and then hauled to a disposal site. (Contact: Lisa Barnett, 202-586-2212)

OIT's budget up 19% to \$166 million in FY99

OIT's budget appropriation for FY99 will total \$165.9 million, up \$27 million—or 19%—from FY98.

OIT's "Industries of the Future" (specific) will receive \$58 million in FY99, up about \$5 million over the previous year. These funds will primarily support recently initiated R&D projects as well as new projects selected in FY99 solicitations for the forest products, steel, aluminum, metalcasting, glass, and chemical industries. In addition, two new "Industries of the Future"—agriculture and mining—will each run R&D solicitations for the first time in FY99 to support the development of new energy efficient technologies that address priority needs identified in each industry's strategic vision and roadmap.

In IOF-crosscutting, a total increase of \$19 million will help accelerate the Advanced Turbine Systems program for a total program budget of \$52.5 million in FY99. The increase also will fund a new effort to improve deployment of Combined Heat and Power systems.

The budgets of other IOF-crosscutting programs also increased. For example, in the advanced materials budget \$3 million was added for ceramic components for microturbines. Also, the Combustion and Sensors and Control programs (which were not funded in FY98) will each receive \$1 million in FY99 to conduct new R&D solicitations addressing needs identified in various industry roadmaps.

OIT's Technology Access program budgets will also increase in FY99 to \$29.1 million, up about \$2.8 million over FY98. Most of the increase in these technical and financial assistance program areas will help fund the new steam and compressed air "challenges" under the Motor Challenge budget line.

Showcase highlights "lost foam" successes, "integrated delivery" benefits

OIT's metalcasting team showcased its lost foam casting R&D successes at the October Lost Foam Conference in Birmingham, AL. The lost foam operations highlighted at the showcase represent significant breakthroughs in the understanding of the lost foam process and process controls—a process that can save an estimated 30% of total energy used in melting. This progress in lost foam casting was made possible through a partnership between DOE and the Lost Foam Casting Consortium.

At the showcase, Denise Swink presented plaques to several key "lost foam" partners in appreciation of their contributions. Recipients included the American Foundrymen's Society, Foseco-Morval,

OIT Budget for FY99 (in \$ million)	
Industries of the Future—Specific	
Forest Products	\$12.1
Steel	\$10.6
Aluminum ^{1/}	\$10.2
Metalcasting	\$5.8
Glass	\$4.8
Chemicals ^{2/}	\$14.5
Industries of the Future—Crosscutting	
Cogeneration	\$52.5
Advanced Industrial Materials	\$6.0
Continuous Fiber Ceramic Composites	\$8.4
Ceramics for Industrial Power	\$3.0
Combustion	\$1.0
Sensors & Controls	\$1.0
Technology Access	
Industrial Assessment Centers	\$8.7
Motor/Steam/Compressed Air Challenge	\$9.6
NICE ³	\$6.0
Inventions & Innovation	\$4.8
Management & Planning	\$8.4
Total, OIT	\$165.9

^{1/} Includes \$2 million for mining industry vision.

^{2/} Includes \$2 million for agriculture industry vision.

American Foam Cast and Citation Casting Corporation. The three casting companies also opened their doors to showcase attendees for tours of their lost foam operations.

In addition to lost foam successes, the showcase highlighted OIT's new "integrated delivery" strategy.

The underlying message of the showcase was that energy efficiency works. It not only saves energy and helps the environment, but also improves a company's bottom line. And, through OIT's integrated delivery approach, these opportunities are becoming ever more accessible to industry.





February 7-9, 1999
Renaissance Washington D.C. Hotel

“Turning Industry Visions Into Reality”

OIT’s 3rd Symposium and Exposition, an event focused on customers, suppliers and Federal and State initiatives, will positively impact your future global competitive position.

Join industry specialists, research and plant managers, technology executives, marketing representatives and government leaders as they focus on the dynamic potential of government-industry collaboration.

Conference themes will include:

- ☆ understanding your customers’ needs and national needs
- ☆ government outlooks for U.S. and national vision industry progress
- ☆ technical excellence as a motivational tool

Additionally, participants will discuss the impact of public policy on research and manufacturing in the U.S., future trends in your customers’ businesses, new technologies, and lessons learned from case studies.

For more information on the 3rd Symposium and Exposition, call toll free, (877) OIT-SYMP, or check out exposition information on our website, www.oit.doe.gov.

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Industry sponsorship has also been vigorous with firms such as Solar Turbines and General Electric investing in a strong presence at the event. In addition, numerous trade associations have been urging their members to participate for the collective benefit of their respective industries.

Expo will also include congressional and industry recognition events. A number of technology champions from both the private and public sectors will be formally recognized by industry for their contributions to boosting the energy efficiency and competitiveness of U.S. industry.

“Everything at Expo—from the informative presentations in the plenary session to conversations in the exhibit hall—will benefit those at the event,” said DOE Assistant Secretary for Energy Efficiency and Renewable Energy Dan Reicher. “If you’re involved in technology decisionmaking at any level, you need to be there.”

For a complete schedule of events and registration information, call toll-free 1-877-OIT-SYMP.



Hotel Reservations

The special room rate at the Renaissance Washington D.C. Hotel for the OIT Exposition is \$124 single, \$149 double, plus applicable taxes. A limited number of rooms are available at the government rate. You may reserve your room by calling the hotel directly at (202) 898-9000 or (800) HOTELS1. Be sure to mention the OIT Exposition to obtain the special rate.

The hotel will require a credit card number or a deposit when you make your reservation. The credit card will not be charged at that time, but if you do not cancel your reservation and do not use it, you will be charged for one night's stay.

You may cancel your reservation without penalty up to 72 hours prior to arrival.

The cut-off date for hotel reservations is January 6, 1999.



Registration Form

Detach and send to: Meeting Management Services, OIT Expo Office
46 South Glebe Rd, Suite 202
Arlington, VA 22204

You may fax your registration to (703) 486-0618 if paying by credit card.

First Name	Middle Name	Last Name	First Name for Badge
Title		Organization	
<input type="checkbox"/> Industry	<input type="checkbox"/> Federal Agency	<input type="checkbox"/> DOE National Laboratory	<input type="checkbox"/> Other
<input type="checkbox"/> State/Local Government	<input type="checkbox"/> University/Institute	<input type="checkbox"/> Association	
Address	City	State	Zip+4
Daytime Phone	Fax	E-mail	
Your primary area of interest (check as many as apply):			
<input type="checkbox"/> Agriculture	<input type="checkbox"/> Aluminum	<input type="checkbox"/> Chemicals	<input type="checkbox"/> Forest Products
<input type="checkbox"/> Metalcasting	<input type="checkbox"/> Mining	<input type="checkbox"/> Petroleum	<input type="checkbox"/> Steel
Registration for:			
<input type="checkbox"/> Early Registration	\$350 (prior to January 1, 1999)		
<input type="checkbox"/> Registration	\$395 (on or after January 1, 1999)		
Payment Method:			
<input type="checkbox"/> Check enclosed. Make payable to "OIT EXPO" - Check will be deposited by Meeting Management Services, Inc. d/b/a OIT Expo Federal ID# 54-1811642			
<input type="checkbox"/> Credit card: <input type="checkbox"/> Visa <input type="checkbox"/> Mastercard <input type="checkbox"/> American Express - Charge on your statement will appear as "Meeting Management Services"			
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<input type="checkbox"/> Please check here if you require special assistance. Attach written description of needs.			
<input type="checkbox"/> Special dietary needs: _____			

INFORMATION CORNER

CALENDAR

Advanced Stationary Reciprocating Engine Workshop, Jan 12-13, San Antonio, TX

Annual Conference on Ceramic, Metal, and Carbon Composite Materials and Structures, Jan 25-29, Cocoa Beach, FL

Workshop on NICE³ Program, Jan 26, Chicago, IL; contact Julie Nochumsom at (312) 886-8579

3rd Industrial Energy Efficiency Symposium & Expo, Feb 7-10, Washington, DC

EPRI Conference on Electric Motor Predictive Maintenance, Feb 8-10, Orlando, FL

Glass Industry Technical Meeting, Feb 11, Washington, DC

128th TMS Annual Meeting and Exhibition, Feb 28-Mar 4, San Diego, CA

Biotechnology Byproducts Consortium Conference, Mar 4-5, Des Moines, IA

American Foundrymen Society's CastExpo '99, Mar 13-16, St. Louis, MO

National Design Engineering Show, Mar 15-18, Chicago, IL

58th Ironmaking Congress, Mar 21-24, Chicago, IL

82nd Steelmaking Congress, Mar 21-24, Chicago, IL

ASTM C-08 on Refractories, Mar 23-25, St. Louis, MO

Refractories Symposium, Mar 26, St. Louis, MO

101st Annual Meeting, AcerS, Apr 25-28, Indianapolis, IN

NACE Corrosion '99 (National Association of Corrosion Engineers), Apr 26-30, San Antonio, TX

Three OIT-supported projects receive R&D 100 Awards

Three projects supported by OIT and conducted at DOE's National Labs have received prestigious R&D 100 Magazine awards for 1998.

Rapid Solidification Process Tooling allows tooling to be produced in one operation, eliminating individual machining stages. Developed by Kevin McHugh at DOE's Idaho National Engineering and Environmental Lab, Idaho Falls, the technology cuts costs and lead time by up to 10 times.

MICLEAN/MICARE Solvent Cleaning Systems clean metals and textiles using liquid carbon dioxide, which is safe, inexpensive, and abundant. Developed by John Fulton of Pacific Northwest National Lab (PNNL) and Joseph DeSimone at MiCELL Technologies Inc., Raleigh, NC, the process minimizes waste, and the harmless residues are easily contained and discarded.

Companies in a diverse array of industries see a compelling business reason to design their processes and products to have minimal environmental impact. The Life-Cycle Advantage software developed by Ken Humphreys of PNNL helps firms evaluate and redesign any phase of their process, such as raw material extraction, manufacturing, recycling, or waste management.

NEW PUBLICATIONS

Title	Area
Motor Challenge Market Assessment (call 800-862-2086 for a copy)	Motor Challenge
MotorMaster + 3.0 software (call 800-862-2086 for a copy)	Motor Challenge
IAC Program Informational CD-ROM	IAC
Advanced Process Control video (call 412-566-2322 for a copy)	Steel
Mining Industry Vision	Mining
Simple Visualization Techniques for Die Casting Part and Die Design	Metalcasting
Die Casting Die Deflections: Prediction and Attenuation	Metalcasting
Energy and Environmental Profile of the U.S. Petroleum Refining Industry	Petroleum Refining

Call 202-586-2090 to order copies, unless otherwise indicated above.

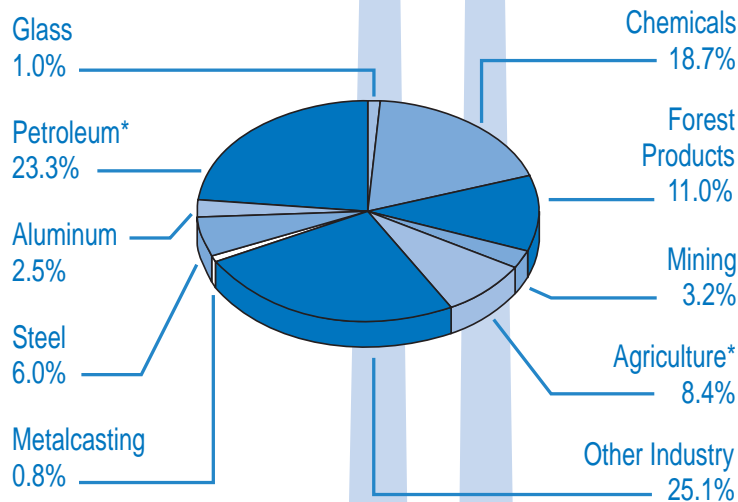
INDUSTRY TRENDS



**GUEST
EDITORIAL**

Industrial Energy Use

Total = 34.12 Quads



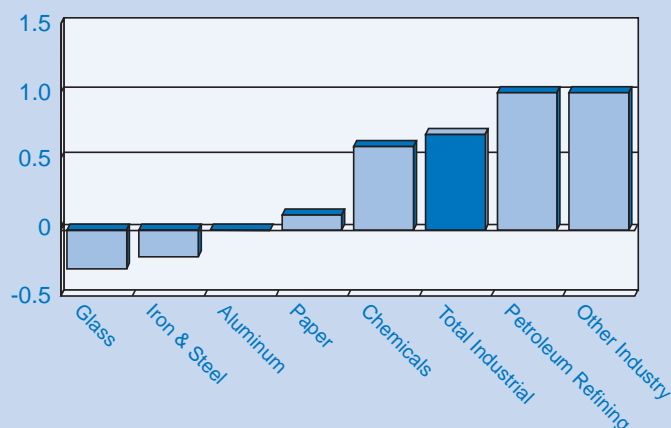
Sources: EIA, Bureau of the Census, Department of Agriculture, OIT estimates.

Note: Data is for 1994 and includes electricity losses.

* Petroleum includes refining and extraction; agriculture includes production and food processing. Other Industry includes other manufacturing industries in SIC 20-39; construction (SIC 15-17); agricultural services (SIC 07); forestry (SIC 08); and fishing, hunting, and trapping (SIC 09).

Projected Industrial Energy Use

Annual % Change, 1996-2020



Source: EIA

Mining Industry Exploring New Technology Paths

by Arlene Anderson,
OIT Mining Team, Process Lead

When it comes to taking action, the mining industry doesn't waste time. Since it signed its compact with DOE in June, 1998, the industry has taken two more important steps in the IOF process.

In September, the industry's strategic vision titled "The Future Begins with Mining, A Vision of the Mining Industry of the Future" was published. The vision addresses things like reducing operational downtime and greatly improving process efficiencies, and contains bold statements about minimizing environmental disruptions and reducing wastes to near-zero!

Then, in October, at its first roadmapping workshop, breakout groups met to discuss safe and efficient mining and processing as well as superior exploration and characterization. Attendees were very enthused about the prospect of using new Lab-developed technology in their operations. Communion schemes, underground robotics, improved dewatering, in-situ extraction, near-face beneficiation, horizon sensing, geologic anomalies, fracture and wear modeling, and ore tracers were among the many technology needs discussed.

But, creating a solid mining "Industry of the Future" will require a high degree of collective commitment and patience. And there are many technology challenges to address—some of which apply to the entire industry and some that pertain to only selected segments of it.

The months ahead promise to be exciting for OIT and our new mining industry partners. Stay tuned!

OIT RD&D Solicitation Schedule

(FY2000 funds unless indicated)

Industry/Program	RFP	Proposals Due	Selections	Funding (approx)	URL To Get a Copy:
Aluminum	Aug '98	Feb '99	Apr '99	\$2-3 mil	id.doe.gov/doiid/psd/solicit.html
Chemicals	Feb '99	TBD	July '99	\$6-10 mil	oit.doe.gov/IOF/chemicals
Forest Products	May '98	Aug '98	July '99	\$4 mil	oit.doe.gov/IOF/forest
Glass	TBD	TBD	TBD	TBD	TBD
Metalcasting	Spring '99	May '99	July '99	\$2 mil	Harvey Wong, 202-586-9235
Mining (FY99)	TBD	TBD	TBD	TBD	TBD
Agriculture (FY99)	TBD	TBD	TBD	TBD	TBD
Steel (FY99/00) AISI	Winter '99	Spring '99	Summer '99	\$2 mil	steel.org (under "mfg & tech")
Steel (FY99) Long-term R&D	Winter '99	Winter '99	Spring '99	\$2 mil	oit.doe.gov/IOF/steel
Inventions & Innovation	3 May 99	2 Aug 99	Nov '99	TBD	oit.doe.gov/Access/inventions
NICE ³	3 May 99	2 Aug 99	Nov '99	TBD	oit.doe.gov/Access/nice3
Combustion (FY99)	TBD	TBD	TBD	TBD	TBD
Sensors and Controls	May '99	July '99	Aug '99	\$1 mil	ch.doe.gov/business/sensor/sensor.htm
States (FY99)	Dec '98	1 Mar 99	April '99	\$2-4 mil	oit.doe.gov/states

Information in this table is periodically updated. Go to www.oit.doe.gov. Click "News" and then click "OIT R&D Solicitation Schedule Announced."

THE OIT TIMES

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